

## REMARKS

Claims 1-62 were pending in the present application, of which Claims 45-50 and 55-62 were withdrawn from consideration in response to the January 22, 2002 restriction requirement. Claims 45-50 and 55-62 are canceled, Claims 9, 10, 26, 27, 29, 31, 32, 40, 41, 43, 52, and 54 are amended, and new Claims 63 and 64 are added in this submission.

In response to the requirement for Election of Species, Applicants elect the species of Figure 1D, which the Examiner designated "Embodiment 3." Claims 1-3, 8-11, 16-20, 31-37, and new Claims 63 and 64 read on Figure 1D.

The Examiner states that "no claim appears to be generic." (Office Action, paragraph 3). This is incorrect. Claim 1 reads on all of the species disclosed in the application, includes no material element additional to those recited in the species claims, and comprehends within its confines the organization covered in each of the species. Hence, Claim 1 meets the definition of a generic claim set forth in MPEP §806.04(d).

Claims 4-7, 12-15, 21-30, and 38-44 depend directly or indirectly on Claim 1. Claims 51-54 also include all of the limitations of Claim 1. Hence, on allowance of generic Claim 1, Applicants would be entitled to consideration of Claims 4-7, 12-15, 21-30, 38-44, and 51-54.

Claims 9, 10, 26, 32, and 40 have been amended to employ an alternative form of Markush group language. Additional amendments to Claims 10, 27, 29, 31, 41, 43, 52, and 54 broaden these claims. The new claims and the amendments to the previously pending claims are supported by the originally filed application. In particular, the "materials containing lead oxide" recited in Claims 10, 27, 29, 41, 43, 52, 54, and the "lead oxide" recited in Claim 63 are supported by the disclosed use of Schott Glass SF59 in bonding layers and lenses. Schott glass SF59 includes lead oxide, as is shown in the material data safety sheet for Schott glass SF59 attached below as Appendix B.

Should the Examiner have any questions concerning this response, the Examiner is invited to telephone the undersigned at (408) 453-9200.

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## Appendix A

The following identifies the changes that the present submission makes to Claims 9, 10, 26, 27, 29, 31, 32, 40, 41, 43, 52, and 54 of U.S. Patent Application Serial No. 09/880,204 (M-8633-1P US).

9. (Amended) The light emitting device of Claim 1, wherein said optical element is formed from a material selected from the group [consisting] of optical glass, III-V semiconductors, II-VI semiconductors, group IV semiconductors and compounds, metal oxides, metal fluorides, diamond, yttrium aluminum garnet, and combinations thereof.

10. (Amended) The light emitting device of Claim 1, wherein said optical element is formed from a material selected from the group [consisting] of zirconium oxide, sapphire, GaP, ZnS, materials containing lead oxide, and SiC.

26. (Amended) The light emitting device of Claim 24, wherein said superstrate layer is formed from a material selected from the group [consisting] of sapphire, SiC, GaN, and GaP.

27. (Amended) The light emitting device of Claim 24, wherein said optical element comprises one of ZnS, zirconium oxide, SiC, materials containing lead oxide, and sapphire, said superstrate comprises one of SiC, GaN, and sapphire, and said semiconductor layers comprise a III-Nitride semiconductor.

29. (Amended) The light emitting device of Claim 24, wherein said optical element is formed from one of zirconium oxide, sapphire, materials containing lead oxide, SiC, ZnS, and GaP, said superstrate is formed from a III-Phosphide material, and said semiconductor layers comprise one of III-Phosphide semiconductors and III-Arsenide semiconductors.

31. (Amended) The light emitting device of Claim [29] 1, further comprising a transparent bonding layer disposed between said optical element and a surface of said stack, said transparent bonding layer bonding said optical element to said stack.

32. (Amended) The light emitting device of Claim 31, wherein said transparent bonding layer is formed from a material selected from the group [consisting] of optical glass,

chalcogenide glass, III-V semiconductors, II-VI semiconductors, group IV semiconductors, organic semiconductors, metals, metal oxides, metal fluorides, yttrium aluminum garnet, phosphides, arsenides, antimonides, nitrides, and combinations thereof.

40. (Amended) The light emitting device of Claim 38, wherein said superstrate layer is formed from a material selected from the group [consisting] of sapphire, SiC, GaN, and GaP.

41. (Amended) The light emitting device of Claim 38, wherein said optical element comprises one of ZnS, zirconium oxide, materials containing lead oxide, SiC, and sapphire, said superstrate comprises one of SiC, GaN, and sapphire, and said semiconductor layers comprise a III-Nitride semiconductor.

43. (Amended) The light emitting device of Claim 38, wherein said optical element is formed from one of zirconium oxide, sapphire, materials containing lead oxide, SiC, ZnS, and GaP, said superstrate is formed from a III-Phosphide material, and said semiconductor layers comprise one of III-Phosphide semiconductors and III-Arsenide semiconductors.

52. (Amended) The light emitting device of Claim 51 wherein said optical element comprises one of zirconium oxide, sapphire, materials containing lead oxide, SiC, ZnS, and GaP.

54. (Amended) The light emitting device of Claim 53 wherein said optical element comprises one of zirconium oxide, sapphire, materials containing lead oxide, SiC, ZnS and sapphire.

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**SCHOTT**  
GLASS TECHNOLOGIES INC.

## MATERIAL SAFETY DATA SHEET

### SECTION I GENERAL INFORMATION

Information furnished by: Schott Glass Technologies, Inc.  
Address: 400 York Avenue, Duryea, PA 18642  
Telephone Number: (717) 457-7485  
Product Name(s): SF-59  
Chemical Name: Inorganic Glass  
C.A.S. Number: 65997-17-3  
Date effective: 03-10-88

### SECTION II INGREDIENTS DATA

CHEMICAL NAME	PERCENT	REG.* (Y/N)	CAS #	OSHA (PEL)	ACGIH (TLV)	CARC. (Y/N)
Silica	1-10	Y	014808607	0.1mg/m <sup>3</sup>	0.1mg/m <sup>3</sup>	N
Boron Oxide	1-10	Y	001303862	15mg/m <sup>3</sup>	10mg/m <sup>3</sup>	N
Lead Oxide	>51	Y	1317368	50ug/m <sup>3</sup>	150ug/m <sup>3</sup>	N
Aluminum Oxide	1-10	Y	001344281	15mg/m <sup>3</sup>	10mg/m <sup>3</sup>	N
Arsenic Trioxide	<1	Y	1327533	10ug/m <sup>3</sup>	200ug/m <sup>3</sup>	Y

\* Regulated as per lists: OSHA 29CFR 1910 Subpart Z; ACGIH: NTP and IARC

### SECTION III PHYSICAL DATA

Boiling point: not applicable  
Vapor pressure: not applicable  
Vapor density: not applicable  
Solubility in water: not applicable  
Specific gravity: 6.29  
Melting point: 362°C  
Physical state: solid with a density of 6.26g/cm<sup>3</sup>  
Appearance and odor: various forms and shapes with no odor

## SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash point: not applicable

Auto ignition temperature: not applicable

Flammable limits/% volume in air: not applicable

Extinguishing media: This material is non-combustible

Special fire fighting procedures: Use extinguishing media that is appropriate for the classification of the surrounding fire. Inorganic glass is non-combustible.

Unusual fire and explosion hazards: There is a possibility of flying glass fragments if hot glass comes in contact with water or carbon dioxide extinguishing media.

## SECTION V HEALTH HAZARD DATA

Route(s) of Entry:      Effects of Overexposure

Inhalation:      Primary effects are those of lead. Acute: Nausea, headache, cramps, dizziness, weakness, diarrhea. Chronic: Damage to liver and kidney, blood forming organs, reproductive system.

Ingestion:      Primary effects are those of lead. May cause vomiting, diarrhea, depression of circulation and in severe cases shock, coma, paralysis and cyanosis.

Skin:      Primary effects are those of arsenic. Arsenic has been known to produce itching, pigmentation and cancerous changes of the skin. Glass dust may cause irritation.

Eye:      May cause irritation.

First Aid:      Inhalation: Remove from exposure. Biological monitoring and medical exam may be required for excessively overexposed persons.

Ingestion: Contact physician immediately.

Skin: Wash with soap and water. Get medical attention if irritation persists.

Eye: Flush well with running water. Get medical attention if irritation persists.

## SECTION VI SPILL, LEAK AND DISPOSAL

Spill or leak procedures: No special precautions.

Waste disposal: Follow Federal, State and Local Regulations.

## SECTION VII SPECIAL PROTECTION INFORMATION

**Engineering controls:** Use local exhaust ventilation, hood or equipment enclosure to avoid dispersal of fibrous or other glass particulates into the workplace air.

**Personal protective equipment:**

**Respiratory** — If glass dust or particulates are above the OSHA permissible exposure limits use a NIOSH approved respirator for dust and fibers.

**Eye protection** — Industrial safety glasses that meet ANSI Z 87 standards.

**Protective gloves** — Recommend gloves for protection from sharp edges.

## SECTION VIII SPECIAL PRECAUTIONS AND COMMENTS

**Reactivity:** This is stable material. Glass is inert to many chemicals, but may react to hot, strong alkaline solutions and with hydrofluoric, fluosilicic and phosphoric acids. **Hazardous Decomposition or Byproducts:** May emit metal oxide fumes when heated to high temperatures.

**Comments:** Inorganic glass is an amorphous, inorganic, usually transparent or translucent substance consisting of a mixture of silicates or sometimes borates or phosphates formed by fusion of silica and various types of oxides with a flux and a stabilizer, into a mass that cools to a rigid condition without crystallization.

This Material Safety Data Sheet is offered solely for your information, consideration and investigation. It provides no warranties, either expressed or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.